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Micron Technology c/o Tom D'Amico
Dickstein, Shapiro, Moran & Oshinsky
2101 L Street NW
Washington, DC 20037-1526

EXAMINER	
NGUYEN, LUONG TRUNG	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/922,507	CHO, KWANG-BO	
	Examiner	Art Unit	
	LUONG T. NGUYEN	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/18/2005 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1-12 filed on 9/19/2005 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claims 13-24 filed on 9/19/2005 have been fully considered but they are not persuasive.

In re page 8, Applicant argues that as defined in applicant's specification and recited in claim 1, the "photoreceptor device geometry" refers to the size, shape, depth, etc. of the depletion area of the photodiodes (the "photodiode area" or the "photodiode size"). Thus, photodiode device geometry applies to an area that lies within the pixel collection area, and not the pixel collection area A. By default, the photodiode size will be less than the pixel collection

area. This distinction between pixel area and photodiode size is critical to understanding of the application and the references.

In response, regarding claim 1, it is noted that the features upon which applicant relies (i.e., "*photoreceptor device geometry*" *refers to the size, shape, depth, etc. of the depletion area of the photodiodes (the "photodiode area" or the "photodiode size"); photodiode device geometry applies to an area that lies within the pixel collection area; the photodiode size will be less than the pixel collection area*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In stead, claim 1 recited limitation "a photoreceptor having a device geometry," which corresponds to a photodiode having a photodiode size (Fossum et al., Column 3, Lines 22-51). The PTO must give claim words their broadest reasonable meaning in their ordinary usage, as understood by one of ordinary skill in the art. *In re Morris*, 127, F.3d 1048, 44 USPQ2d 1023 (Fed. Cir. 1997).

In re page 8, Applicant argues that Fossum et al. '100 does not teach or suggest a macro-pixel with "each color pixel element including a photoreceptor having a device geometry" and "the photoreceptor of a first of the color pixel elements receiving a first color of light and having a first geometry and a responsivity to said first color of light that is a function of the first geometry."

In response, regarding claim 1, the Examiner considers that Fossum et al. does discloses this feature. Fossum et al. does discloses the photoreceptor of the first one of the color pixel elements (red color, Figure 1B) having a first geometry and a responsivity to light that is a

function of the first geometry of the photoreceptor (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51).

In re page 9, Applicant argues that Fossum et al. '100 does not teach or suggest an assembly with a plurality of macro pixels in which each of three different color pixel elements of "substantially equal pixel area" has a "photoreceptor having a device geometry" and each color pixel element is "configured and arranged to receive a color of light" and "a responsivity to light that is a function of the geometry of the photoreceptor."

In response, regarding claim 13, the Examiner considers that Fossum et al. does discloses these features. Fossum et al. discloses three color pixel elements Red, Blue, Green are the same size as shown in Figure 1A, Column 2, Lines 31-37. Note that the photodiodes correspond to Red, Blue, Green color, each has a photodiode size. Further, Fossum et al. discloses the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51, which correspond to "a responsivity to light that is a function of the geometry of the photoreceptor."

In re pages 12, 14, Applicant argues that Perregaux et al. do not disclose "a switch configured and arranged to selectively change the device geometry."

In response, regarding claim 21, Applicant recited limitation "at least three color pixel elements having equal pixel areas, each color pixel element including a photoreceptor having a device geometry and at least one switch configured and arranged to selectively change the device geometry." The Examiner considers that this feature is taught by Perregaux et al. Perregaux et al. discloses a color array, in which photodiode size (device geometry) can be altered to change

the spatial sensitivity of the individual photodiodes if required (Column 5, Lines 25-32, Lines 60-62). This clearly indicates that each of photodiode includes a switch to alter photodiode shape.

Claim Objections

3. Claims 13-20 are objected to because of the following informalities:

Claim 13 (line 1), "comprising;" should be changed to --comprising:--.

Claim 13 (line 3), "comprising;" should be changed to --comprising:--.

Claims 14-20 are objected as being dependent on claim 13.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Fossum et al. (US 6,137,100).

Regarding claim 13, Fossum et al. discloses a CMOS color pixel assembly (CMOS image sensor, Column 2, Lines 5-12), comprising:

a plurality of macro pixels (macro pixel, Column 2, Lines 5-30), each macro pixel of the plurality of macro pixels, comprising:

at least three color pixel elements of substantially equal pixel area (Red, Blue, Green, Figures 1A, 1B, Column 2, Lines 31-59), each color pixel element including a photoreceptor (photodiode, column 3, Lines 22- 51) having a device geometry (photodiode size), responsive to receiving light, to generate an output signal indicative of an amount of light photons received (Column 3, Lines 22-61);

a first one of the color pixel elements, configured and arranged to receive a first color of light (red color, Figure 1B), the photoreceptor of the first one of the color pixel elements having a first geometry and a responsivity to light that is a function of the first geometry of the photoreceptor (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51);

a second one of the color pixel elements configured and arranged to receive a second color of light (blue color, Figure 1B) different than the first color of light, the photoreceptor of the second one of the color pixel elements having a second geometry and a responsivity to light that is a function of the second geometry (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51);

a third one of the color pixel elements, configured and arranged to receive a third color of light (green color, Figure 1B) different than the first color of light and the second color of light, the photoreceptor of the third one of the color pixel elements having a third geometry and a

responsivity to light that is a function of the third geometry of the photoreceptor (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51).

Regarding claim 14, Fossum et al. discloses the first geometry, the second geometry, and the third geometry are selected such that the responsivity of the output signal of the first one of the color pixel elements to the first color of light, and the responsivity of the output signal of the second one of the color pixel elements to the second color of light, and the responsivity of the output signal of the third one of the color pixel elements to the third color of light is a predetermined ratio (ratio 2.5 Vb:1.5 Vr:1.0Vg (column 1, Lines 52-57).

Regarding claim 15, Fossum et al. discloses the predetermined ratio is about 1:1:1 (Figure 1A).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 4-7, 10-12, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum et al. (US 6,137,100) in view of Perregaux et al. (US 5,119,181).

Regarding claim 1, Fossum et al. discloses a macro-pixel (macro pixel, Column 2, Lines 5-30), comprising:

at least two color pixel elements of substantially equal pixel area (Red, Blue , Green, Figures 1A, 1B, Column 2, Lines 31-59), each color pixel element including a photoreceptor (photodiode, Column 3, Lines 22-51) having a device geometry (photodiode size), responsive to receiving light, to generate an output signal indicative of an amount of light photons received (Column 3, Lines 22-61);

the photoreceptor of a first of the color pixel elements receiving a first color of light (Red color, Figure 1B) and having a first geometry and a responsivity to said first color of light that is a function of the first geometry (the collection efficiency is proportional to the size of the collection area, Column 3, Lines 22-51);

the photoreceptor of a second of the color pixel elements receiving a second color of light (Blue color, Figure 1B) different from the first color of light and a responsivity to said second color of light that is a function of the second geometry (the collection efficiency is proportional to the size of the collection area, Column 3, Lines 22-51);

the first geometry and the second geometry being such that the responsivity of the output signal of the first of the color pixel element to the first color of light is a predetermined ratio of the responsivity of the output signal of the second of the color pixel elements to the second color of light (ratio 2.5 Vb: 1.5Vr : 1.0Vg, Column 1, Lines 52-57).

Fossum et al. fails to specifically disclose a second of the color pixel elements having a second geometry different from the first geometry. However, Perregeaux et al. discloses a color array, in which photodiode shape can be altered to change the spatial sensitivity of the individual

photodiodes if required (Column 5, Lines 25-32, Lines 60-62). This means that the photodiode shape of the photodiode corresponds to a second color (such as Blue color) is different from the photodiode shape of the photodiode corresponds to a first color (such as Red color); note that the spectral sensitivity of Red color and Blue color are different. Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. by the teaching of Perregaux et al. in order to change the spatial sensitivity of the individual photodiodes if required (Column 5, Lines 60-62).

Regarding claim 4, Fossum et al. discloses the predetermined ratio is about 1:1 (Figure 1A).

Regarding claim 5, Fossum et al. discloses a third one of the color pixel elements, to receive a third color of light (green color, Figure 1B) different than the first color of light and the second color of light, the photoreceptor of the third one of the color pixel elements having a third geometry and a responsivity to light that is a function of the third geometry of the photoreceptor (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51).

Regarding claim 6, Fossum et al. discloses the first geometry, the second geometry, and the third geometry are selected such that the responsivity of the output signal of the first one of the color pixel elements to the first color of light, and the responsivity of the output signal of the second one of the color pixel elements to the second color of light, and the responsivity of the

output signal of the third one of the color pixel elements to the third color of light is a predetermined ratio (ratio 2.5 Vb:1.5 Vr:1.0Vg, Column 1, Lines 52-57).

Regarding claim 7, Fossum et al. discloses the predetermined ratio is about 1:1:1 (Figure 1A).

Regarding claims 10-11, 19-20, Fossum et al. fails to specifically disclose at least one of the color pixel elements further comprises at least one switch coupled to the photoreceptor to vary the device geometry. However, Perregeaux et al. discloses a color array, in which photodiode shape can be altered to change the spatial sensitivity of the individual photodiodes if required (Column 5, Lines 25-32, Lines 60-62). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. by the teaching of Perregaux et al. in order to change the spatial sensitivity of the individual photodiodes if required (Column 5, Lines 60-62).

Regarding claim 12, Fossum et al. discloses a color pixel assembly, the color pixel assembly (CMOS image sensor, Column 2, Lines 5-12) including a plurality of macro pixels (macro pixels, Column 2, Lines 5-30).

Regarding claim 21, Fossum et al. discloses a color pixel assembly (CMOS image sensor, Column 2, Lines 5-12) including at least one macro pixel (macro pixel, Column 2, Lines 5-30), the macro pixel comprising:

at least three color pixel elements having equal pixel areas, (Red, Blue, Green, Figures 1A, 1B, Column 2, Lines 31-59), each color pixel element including a photoreceptor (photodiode, column 3, Lines 22- 51) having a device geometry (photodiode size), responsive to receiving light, to generate an output signal indicative of an amount of light photons received (Column 3, Lines 22-61);

a first one of the color pixel elements, configured and arranged to receive a first color of light (red color, Figure 1B), the photoreceptor of the first of the color pixel elements having a first geometry and a responsivity to light that is a function of the first geometry of the photoreceptor, the responsivity of the output signal of the photoreceptor to the first color being controllable by changing the first geometry (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51);

a second of the color pixel elements configured and arranged to receive a second color of light (blue color, Figure 1B) different than the first color of light, the photoreceptor of the second one of the color pixel elements having a second geometry and a responsivity to light that is a function of the second geometry, the responsivity of the output signal of the photoreceptor to the second color being controllable by changing the second geometry (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51);

a third one of the color pixel elements, configured and arranged to receive a third color of light (green color, Figure 1B) different than the first color of light and the second color of light, the photoreceptor of the third one of the color pixel elements having a third geometry and a responsivity to light that is a function of the third geometry of the photoreceptor, the responsivity of the output signal of the photoreceptor to the third color being controllable by changing the

third geometry (the collection efficiently is proportional to the size of the collection area, Column 3, Lines 22-51).

Fossum et al. fails to specifically disclose each color pixel element including at least one switch configured to selectively change the device geometry. However, Perregeaux et al. discloses a color array, in which photodiode shape can be altered to change the spatial sensitivity of the individual photodiodes if required (Column 5, Lines 25-32, Lines 60-62). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. by the teaching of Perregaux et al. in order to change the spatial sensitivity of the individual photodiodes if required (Column 5, Lines 60-62).

Regarding claim 22, Fossum et al. discloses the first geometry, the second geometry, and the third geometry are controlled such that the responsivity of the output signal of the first one of the color pixel elements to the first color of light, and the responsivity of the output signal of the second one of the color pixel elements to the second color of light, and the responsivity of the output signal of the third one of the color pixel elements to the third color of light is a predetermined ratio (ratio 2.5 Vb:1.5 Vr:1.0Vg (Column 1, Lines 52-57).

Regarding claim 23, Fossum et al. discloses the predetermined ratio is about 1:1:1 (Figure 1A).

8. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum

et al. (US 6,137,100) in view of Perregaux et al. (US 5,119,181) further in view of McDaniel et al. (US 6,040,592).

Regarding claim 2, Fossum et al. and Perregaux et al. fail to specifically disclose the photoreceptor of each color pixel element is selected from the group consisting of n-wells, n+ diffusion, p-wells, p+ diffusion, and photogates. However, McDaniel et al. teaches that a photodiode is created between ground, a common node having electrical contact with the substrate, and the diffusion 209, the diffusion 209 is doped as an N+ diffusion region (Column 3, Lines 29-35). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. and Perregaux et al. by the teaching of McDaniel et al. in order to make ohmic contact to the well (column 3, Lines 33-35).

Regarding claim 3; Fossum et al. fails to specifically disclose the photoreceptor of each color pixel element is an n+ diffusion. However, McDaniel et al. teaches that a photodiode is created between ground, a common node having electrical contact with the substrate, and the diffusion 209, the diffusion 209 is doped as an N+ diffusion region (Column 3, Lines 29-35). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. by the teaching of McDaniel et al. in order to make ohmic contact to the well (column 3, Lines 33-35).

9. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum et al. (US 6,137,100) in view of Perregaux et al. (US 5,119,181) further in view of Fossum et al. (US 5,949,483).

Regarding claim 8, Fossum et al. ('100) and Perregaux et al. fail to specifically disclose a microlens photonically coupled to at least one of the color pixel elements. However, Fossum et al. ('483) discloses an active pixel sensor array, in which each pixel corresponding to red filter 600, blue filter 604, green filter 610 is covered by microlenses 115A, 115B, 115C (Figure 5A, Column 7, Line 58 – Column 8, Line 13). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. ('100) and Perregaux et al. by the teaching of Fossum et al. ('483) in order to focus incoming light onto pixel.

Regarding claim 9, Fossum et al. ('100) and Perregaux et al. fail to specifically disclose corresponding microlens photonically coupled to each of the color pixel elements. However, Fossum et al. ('483) discloses an active pixel sensor array, in which each pixel corresponding to red filter 600, blue filter 604, green filter 610 is covered by microlenses 115A, 115B, 115C (Figure 5A, Column 7, Line 58 – Column 8, Line 13). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. ('100) and Perregaux et al. by the teaching of Fossum et al. ('483) in order to focus incoming light onto pixel.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum et al. (US 6,137,100) in view of McDaniel et al. (US 6,040,592).

Regarding claim 16, Fossum et al. fails to specifically disclose the photoreceptor of each color pixel element is selected from the group consisting of n-wells, n+ diffusion, p-wells, p+

diffusion, and photogates. However, McDaniel et al. teaches that a photodiode is created between ground, a common node having electrical contact with the substrate, and the diffusion 209, the diffusion 209 is doped as an N+ diffusion region (Column 3, Lines 29-35). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. by the teaching of McDaniel et al. in order to make ohmic contact to the well (Column 3, Lines 33-35).

11. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum et al. (US 6,137,100) in view of Fossum et al. (US 5,949,483).

Regarding claim 17, Fossum et al. ('100) fails to specifically disclose a microlens photonically coupled to at least one of the color pixel elements. However, Fossum et al. ('483) discloses an active pixel sensor array, in which each pixel corresponding to red filter 600, blue filter 604, green filter 610 is covered by microlenses 115A, 115B, 115C (Figure 5A, Column 7, Line 58 – Column 8, Line 13). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. ('100) by the teaching of Fossum et al. ('483) in order to focus incoming light onto pixel.

Regarding claim 18, Fossum et al. ('100) fails to specifically disclose corresponding microlens photonically coupled to each of the color pixel elements. However, Fossum et al. ('483) discloses an active pixel sensor array, in which each pixel corresponding to red filter 600, blue filter 604, green filter 610 is covered by microlenses 115A, 115B, 115C (Figure 5A, Column 7, Line 58 – Column 8, Line 13). Therefore, it would have obvious to one of ordinary

skill in the art at the time the invention was made to modify the device in Fossum et al. ('100) by the teaching of Fossum et al. ('483) in order to focus incoming light onto pixel.

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fossum et al. (US 6,137,100) in view of Perregaux et al. (US 5,119,181) further in view of McDaniel et al. (US 6,040,592).

Regarding claim 24, Fossum et al. and Perrgaux et al. fail to specifically disclose the photoreceptor of each color pixel element is selected from the group consisting of n-wells, n+ diffusion, p-wells, p+ diffusion, and photogates. However, McDaniel et al. teaches that a photodiode is created between ground, a common node having electrical contact with the substrate, and the diffusion 209, the diffusion 209 is doped as an N+ diffusion region (Column 3, Lines 29-35). Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Fossum et al. by the teaching of McDaniel et al. in order to make ohmic contact to the well (column 3, Lines 33-35).

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NGOCYEN VU can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN
11/11/05

Luonahuna Nguyen

LUONG T. NGUYEN
PATENT EXAMINER